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PATENT SPECIFICATION



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Complete Specification Accepted: May 26, 1938.

COMPLETE SPECIFICATION

Dyeing Medium for Live Hair

We, FRANZ STRÖHER A. G., of Rothenkirchen i.V., Germany, a joint stock Company, organised under the Laws of Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to aqueous hair dyes and particularly to dyes which are applied in the form of a paste.

It is known to produce a hair dyeing medium in the form of a paste consisting of a dye and a thickening agent. Monohydric high molecular aliphatic alcohols with at least eight carbon atoms to the molecule and dihydric or polyhydric aliphatic alcohol monoesters of fatty acids containing at least twelve carbon atoms to the molecule have been used as the thickening agent.

According to the invention a more uniform composition of the paste is obtained by adding to the thickening agent emulsifying media consisting of an alkali salt of a sulphonated high molecular aliphatic alcohol with at least eight carbon atoms in the molecule or an alkali salt of a high molecular aliphatic sulphonic acid with at least eight carbon atoms in the molecule and with or without nitrogen in the molecule.

These completely fat-free thickening media produce a still more uniform composition if cholesterin is incorporated with them. This is effected most easily if the cholesterin is first of all dissolved in the melted thickening paste. The addition of cholesterin has a further advantage of effectively preventing skin irritations which may easily occur with sensitive persons. Aromatic diamines and aminophenols (that is oxidation dyes) chiefly come into question as hair dyes. However, tar dyes may be used which are applied to the hair cold such as Nitroaminophenols, *p*-Nitrophenylglycine, Nitro-*p*-phenylenediamine and others of like nature.

The alcohol or ester is melted on a water bath, the emulsifier is uniformly distributed in this and then as much water (preheated to 70° Centigrade) is

added as is required to form a paste. Then when the paste has become thick on cooling the dye is introduced and uniformly distributed. When dyeing with this paste it is necessary as always when using oxidation dyes to admix a small quantity of Perhydrol (hydrogen peroxide 30%) before use.

The following can be used as liquid hair dyeing media the parts referred to being parts by weight:—

EXAMPLE 1.

20 parts of a liquid dye consisting of:
2 parts *p*-toluylene diamine sulphate
17 parts water and
3 parts ammonia (0.910) heated together until the dyeing base is set free and has dissolved, are added to
60 parts of water.

This aqueous dyeing medium is mixed into the melted mixture of:
20 parts of stearic acid mono-glycol ester and
2 parts lauryl-alcohol-sulphuric - acid-ester sodium salt.

The dyeing paste dyes blonde.

EXAMPLE 2.

20 parts of a liquid dye consisting of:
5 parts *p*-Nitrophenylglycine and
2 parts ammonia dissolved with heating in
13 parts of water are added to
60 parts of water and this solution is placed in the melted mixture of:
20 parts of stearic acid monoglycol-ester and
2 parts oleylmethylaminoethanesulphonic acid sodium salt in which the "oleyl" radical is of the group C₁₇H₃₃.CO.

This dyeing paste dyes yellow blonde.

EXAMPLE 3.

20 parts of a liquid dye consisting of:
1 part *p*-Toluylene diamine and
1 part *m*-Toluylene diamine dissolved in
18 parts water, are added to
60 parts water and this solution is incorporated in the melted mixture of
20 parts myristyl alcohol and
2 parts lauryl-alcohol-sulphuric - acid-ester sodium salt. The finished paste

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dyes blue to blue-green.

EXAMPLE 4.

- 20 parts of a liquid dye consisting of
 5 2 parts 4-nitro-2-amino-phenol-
 sodium salt dissolved in
 18 parts water are added to
 60 parts of water and this solution is put
 into the melted mixture of
 20 parts myristyl alcohol and
 10 2 parts of the oleylmethylaminoethane-
 sulphonic acid sodium salt afore-
 mentioned.

This paste dyes the hair red.

EXAMPLE 5.

- 15 20 parts of a liquid dye consisting of
 1 part *pp*-diamino-diphenyl-amine
 and
 1 part 1,5-Dioxynaphthalene dis-
 solved in
 20 10 parts benzyl alcohol and
 10 parts ethyl alcohol are mixed
 with
 60 parts of a liquid soap consisting of a
 10% aqueous solution of a fatty acid
 25 alkali salt and placed in the melted
 mixture of
 20 parts palmityl alcohol and
 2 parts of the oleylmethylaminoethane-
 sulphonic acid sodium salt aforemen-
 30 tioned.

This paste dyes the hair blue-green.

Preferably, one part of cholesterol is
 added in each of the above examples, the
 cholesterol being dissolved in the alcohol

or ester before the emulsifier is added.

Having now particularly described and
 ascertained the nature of our said inven-
 tion and in what manner the same is to
 be performed, we declare that what we
 claim is:—

1. An aqueous hair dyeing medium for
 live hair comprising a dissolved syn-
 thetic organic hair dye and a mono-
 hydric, high molecular, aliphatic
 alcohol with at least eight carbon atoms
 to the molecule or a dihydric or poly-
 hydric aliphatic alcohol monoester of a
 fatty acid containing at least twelve car-
 bon atoms to the molecule, characterised
 by the addition of an emulsifying medium
 consisting of an alkali salt of a sulpho-
 nated high molecular aliphatic alcohol
 with at least eight carbon atoms to the
 molecule or an alkali salt of a high mole-
 cular aliphatic-sulphonic acid with at
 least eight carbon atoms in the molecule
 and with or without nitrogen in the mole-
 cule.

2. Medium according to Claim 1
 characterised by the addition of choles-
 terin.

Dated this 26th day of November, 1936.
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